

Waste water drainage  
Product and Technical Guide

# Wavin SiTech+ for low-noise soil & waste drainage







Wavin is one of the leading companies in the plastic pipe industry in Turkey. Our company offers a wide range of high-quality pipe and fittings system solutions for building and infrastructure. Our company, which has a history of more than half a century, started production in 1971 in Adana. Pilsa Plastik A.Ş. was purchased by Wavin B.V, the largest European company in its own field in the Netherlands in 2008.

In 2012, all Wavin companies joined the Mexichem family which is South America's giant petrochemicals and raw materials producer. Mexichem announced its new name as ORBIA in 2019. ORBIA, with its new changing business structure, provides professional support to its customers with its products and services in 5 main business lines: Building & Infrastructure, Flour, Datacom, Precision Agriculture and Polymer Solutions. With the new structuring of ORBIA, its main mission is to advance life around the world.

In 2019, with the renewed business structure of ORBIA, building & infrastructure business line was started to represent by WAVIN, a single and strong brand across the globe. WAVIN operates in more than 40 countries around the world in 4 main regions: Europe-Middle East-Africa, Asia-Pacific, Latin America and USA-Canada with 12.000 employees.

Wavin is now a global leader in the supply of plastic pipe systems and solutions for both above and below ground applications in projects around the world. Since the 1950s, we have built an unrivalled reputation for continuous innovation, intelligent problem-solving, dedicated technical support and the highest standards.

Wavin Turkey offers traditional products such as PPR-C clean water, PVC wastewater as well as the innovative products such as Tigris Press-fit systems, SiTech+ low noise pipes, Qickstream siphonic rainwater drainage systems, Q-Bic Plus infiltration systems, Tegra plastic manholes etc. to the sector. Wavin Academy which is the first training centre of the sector. was opened in 2014 within our factory in Adana, Tens of thousands of visitors from various levels of the mechanical installation sector have been able to increase their expertise by attending training at Wavin Academy since 2014. Our company provides fast service with Adana, Istanbul, Ankara and Izmir offices, distribution centres located in Istanbul and Adana and wide dealers network. In addition to our sales staff, our expert engineers and technical personnel support our customers for the projects.

To get more information about our company and products, please visit our website [www.wavin.com.tr](http://www.wavin.com.tr) and follow us on our social media accounts.



# Wavin SiTech+

## System description

Wavin SiTech+ is a mineral reinforced polypropylene (PP) soil and waste system. The system offers increased robustness, low-noise properties and improved ease of installation.

We have increased the weight of the fittings by 20% for improved acoustic comfort during water flow. Its flexible connectivity and push-fit system makes SiTech+ a complete plug and play solution for waste water discharge in buildings.

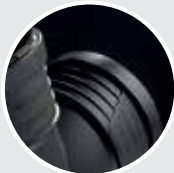
Quality of living is an important consideration in building design. A reduction of noise in water discharge systems improves end-experience in both living and working environments. Wavin SiTech+ meets the latest construction requirements and fulfills customers' demand for increased comfort and quality.

## Key system benefits



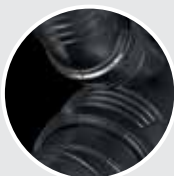
### Less noise

20% heavier fittings set a new market standards in this segment. SiTech+ is a high performance system that reduces the acoustics of water flow.



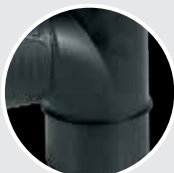
### Easier to install

Ribbed fittings provide enhanced grip for easy installation in complex environments. SiTech+ is perfect for any project, from small renovations to large-scale construction jobs.



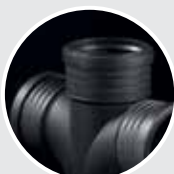
### Angular rotation guidance

Fittings have different markings at 15° and 45° intervals for easy alignment. SiTech+ makes it easy to align fittings which need to be positioned at a rotated angle.



### Insertion depth check

Ribs on the spigots of the fittings checks complete insertion into the socket. These easily visible SiTech+ markings can also confirm the exact 10 mm space needed to cope with thermal expansions at long pipe lengths.



### New black color

The new black color adds to the durability and robustness of SiTech+. The black color improves protection against UV radiation when stored outside at a building site. Furthermore the matte black finish is less sensitive to dirt and gives the system a professional appearance.

## Application

Wavin SiTech+ meets all standards set for soil & waste discharge systems (EN 1451-1), including noise reduction and fire resistance (EN 13501-1). The emitted noise level of SiTech+ is measured by the Stuttgart Fraunhofer Institute (DIN EN 14366).

Wavin SiTech+ is the ideal solution for installation in multi-storey building and those that are particularly sensitive to noise like apartment buildings, hotels, offices, hospitals, elderly homes and libraries.

Wavin SiTech+ can be used for water discharge at temperatures up to 90°C, with peaks of to 95°C for short periods. It can also be used at low temperatures up to -20°C. This durability makes it an ideal solution for extreme-temperature drainage areas such as kitchens, laundromats and industrial waste environments.

Please contact Wavin if you have any questions about installation.

The system is offered in a full range of diameters:

- 50 mm
- 75 mm
- 90 mm
- 110 mm
- 125 mm
- 160 mm
- 200 mm (Without Socket)

## Special fittings

The Wavin SiTech+ portfolio includes specialized fittings for easier and more efficient installation and use, particularly in areas where space is limited.

Swept branches, as compared to sharp angle fittings, allow water to run more smoothly while reducing overall noise levels, improve the ventilation and increase the flow rate.

The new design of access pipes makes inspection easier.



Access piece



Expansion Socket



Swept Branch



Double Swept Branch



Shower Branch



Corner Branch

# Technical data

## Wavin SiTech+

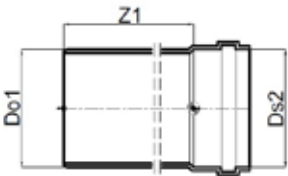
Wavin SiTech+ is an innovative soil and waste system with proven low noise technology.

### Technical features:

- Optimized 3-layer pipe structure for reduced noise levels
- Mineral reinforced polypropylene (PP) material for high durability and heat-resistance
- Socketed connections and prefabricated elastomer gaskets (SBR) for fast, easy and secure installation

Table 1: SiTech+ data according to diameters.

Diameter Do1=Ds2	Wall thickness s	Socket length P	Class Serie
50 mm	2.1 mm	47 mm	S14
75 mm	2.6 mm	53 mm	S14
110 mm	3.6 mm	64 mm	S16
125 mm	4.0 mm	71 mm	S16
150 mm	5.0 mm	76 mm	S16
200 mm	6.2 mm	-	S16



**Impact resistant**

**Sound absorbing**

**Chemical resistant**

Table 2: SiTech+ specifications and standards.

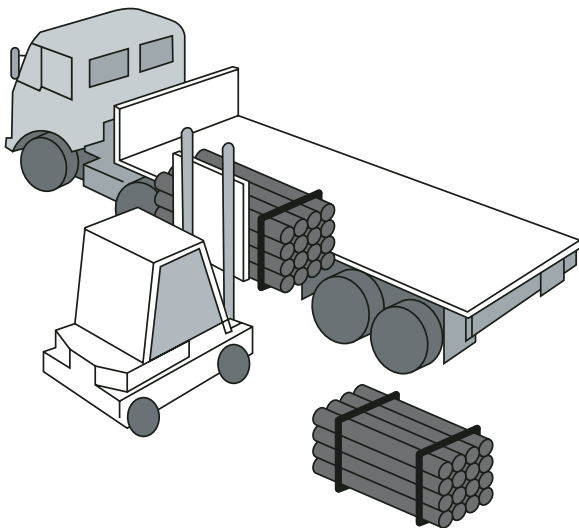
Characteristics	Reference Value	Norm
Long Reversion (150° C x 60')	≤ 2.0%	ISO 2505
Impact resistance (0° C)	TIR ≤ 10%	EN 744
Fire behavior	E	DIN 4102-1 EN 13501-1
Density	Pipe 1.2 gr/cm <sup>3</sup> Fittings 1.50 gr/cm <sup>3</sup>	UNI EN ISO 1183-1
Operating temperature	90°C water discharge 95°C shortterm peak load	
Expansion linear	0.12 mm/m/K	ASTM D 696
Effects of heat (150° C x 60')	No delamination/ deformation	EN ISO 580
Water leakage	No leakage	EN 1053
Tightness	No leakage	EN 1054
Thermal cycle	No leakage	EN 1055
Ring stiffness	≥6 Kn/m <sup>2</sup>	
<b>Noise Level (*)</b>	<b>19db(A)</b>	<b>DIN4109</b>
	<b>15db(A)</b>	<b>VDI4100</b>
	<b>15db(A)</b>	<b>EN14366</b>

\* According to Fraunhofer test results for 4l/s flowrate.

# Installation

## Handling

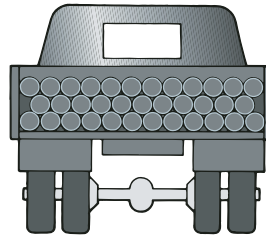
- ⌚ Handle pipes and fittings with care. Excessive scratching or impact stress on the pipe may damage the external structure or affect the seal properties.
- ⌚ Loose pipes need to be unloaded by hand. When pipes are inserted one inside the other, always remove the inside pipe first.
- ⌚ When bundles of pipes are unloaded by fork truck, we recommend the wrap nylon sheaths around metal forks or use plastic forks. Metal forks, hooks and chains may not come in contact with the pipes. Do not use forks with an extension.
- ⌚ If the loading or unloading is carried out with a crane and excavator arms, the pipes must be raised in the central area with a sling of adequate width.



*Unloading strapped pallets.*

## Transport

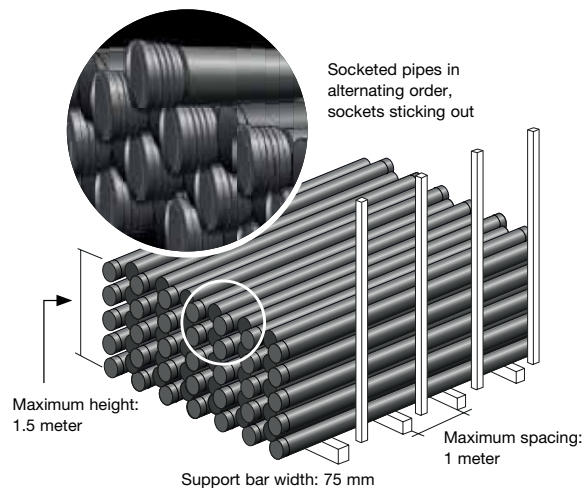
- ⌚ Wavin SiTech+ pipes, when no longer packed in original packaging, must be stored fully supported over their total length on a clean surface during transport.
- ⌚ Bending of the pipes should be avoided.
- ⌚ Impact stress on pipe and fittings must be prevented.



*Transport of loose Wavin pipes.*

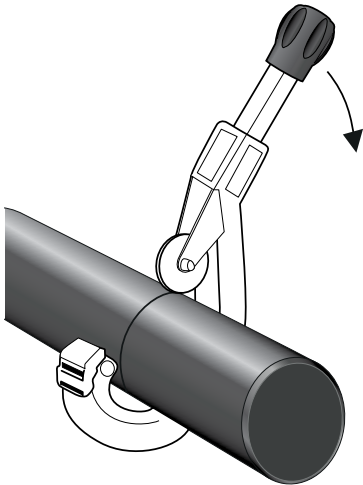
## Storage

- ⌚ Always store pipes on a flat surface.
- ⌚ Pallets must be stored at a maximum height of 1.5 m without additional supports or side barriers.
- ⌚ Loose pipes:
  - must have at least 2 side supports equally spread over the pipe length,
  - maximum height of storing loose pipes is 1.5 m.,
  - the ideal situation is to support the loose pipes along their whole length. If this is not possible, place wooden supports of at least 75 mm wide under the pipe at a distance of maximum 1 m.,
  - stack the different sizes of pipes separately or, if this is not possible, stack them with the largest diameters on the bottom,
  - socketed pipes should be stacked in an alternating order to secure support over the full pipe length (see picture).
- ⌚ Fittings are supplied in carton boxes and must be stored indoors. Deformation resulting from excessive loads on the fittings should always be avoided.
- ⌚ Store lubricant in a cool place, away from heat sources or direct sunlight.



## Cutting pipes

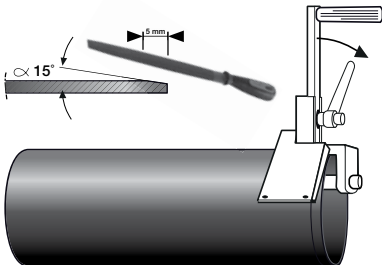
1. Cut the pipe cleanly at a right angles to its axis. Whenever possible, use a pipe cutter.



2. De-burr the cut end with a scraper.

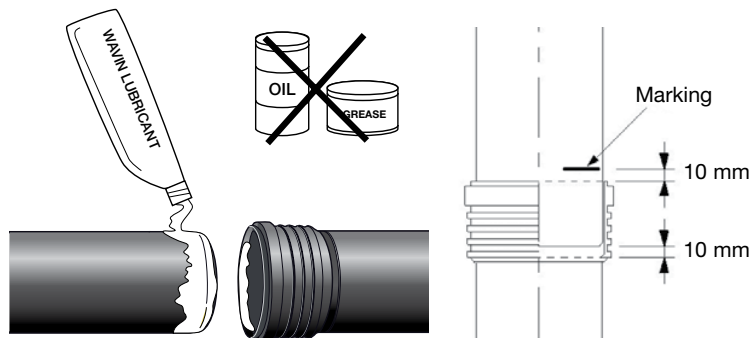


3. Chamfer the pipe end 5 mm over the length of the pipe, at 15°.



## Ring seal / push-fit jointing

1. Ensure the pipe cut is chamfered.
2. Check that the sealing ring is properly seated in the seal groove of the fitting or pipe.
3. Ensure all components to be joined are dry, clean and free from dirt or dust. Ensure that there are no deep scratches on the pipe or fitting spigot as these may prevent the sealing ring from forming a watertight seal.
4. Lubricate evenly around the pipe or fitting spigot using Wavin lubricant. Do not use oils or greases.
5. Correctly align the components to be joined.
6. Push the pipe or fitting spigot fully into the socket. When inserting a pipe length of 2 metres or more, mark the pipe spigot at the socket face and then withdraw it by 10 mm to allow for thermal expansion.
7. Make a subsequent check to ensure that the expansion gap is not lost during further installation work.

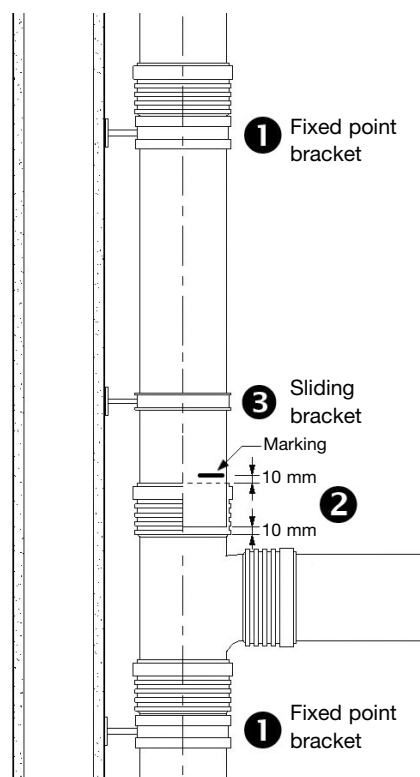




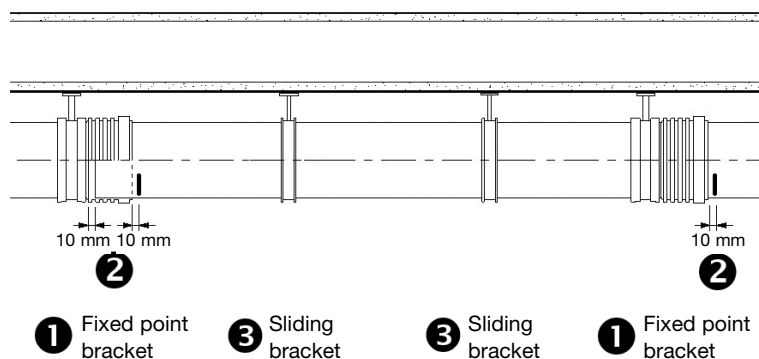
## Pipe supports

- Use only rubber lined pipe clamps to minimise structure borne sound.
- Pipes should be supported at the following maximum distances:

OD (mm)	Maksimum supporting distances	
	Vertical (m)	Horizontal (m)
50	1.50	0.75
75	2.00	1.10
90	2.00	1.35
110	2.00	1.65
125	2.00	1.85
160	2.00	2.40
200	2.00	3.00



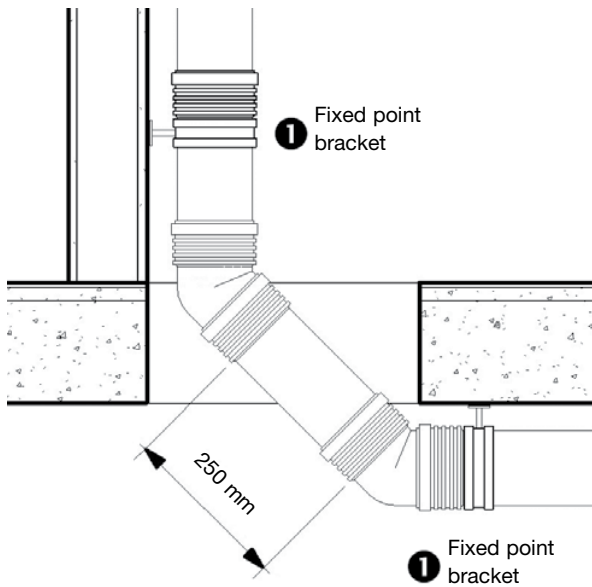
- Ensure the pipe system is installed free of tension.
- Fixed-point brackets prevent pipe movement after the screws are tightened. After tightening the screws of a sliding bracket the pipe can still be moved through the bracket.
- For every pipe of length of 2 metre or more, place a fixed-point bracket directly next to the socket, as shown at point ①.
- For vertical pipes, the fixed-point bracket always needs to be installed at the top side of the pipe underneath the socket. Ensure that the expansion gap of 10 mm at the spigot end ② is not lost during placement of the fixed-point bracket.
- Next to each fitting, or groups of fittings, always a fixed-point bracket should be installed.
- Any additional pipe brackets, both for vertical as well as horizontal pipes, must be fitted as a sliding bracket ③ to allow for linear expansion due to changes in temperature.
- If there is an option to fix the bracket to different walls, always take the wall with the highest mass.
- Sections of piping with fittings or short pipes must be secured with pipe brackets at intervals short enough to ensure that they cannot slide apart.



## Pipe routing and special fittings

### Vertical soil stack to horizontal

- Never use a 90° bend when connecting a vertical soil stack to a horizontal pipe, always use two 45° bends.
- In buildings with more than three storeys, (>10 metre soil stack) install a 250 mm pipe between the two 45° bends, when space allows. This 250 mm straight area in the bend will reduce the noise created by the water flowing from the soil stack to the horizontal collector pipe.
- Secure a proper fixation of this part by using two fixed point brackets ①, one fixed to a short piece of pipe fixing in the vertical plane and one fixed point bracket as close as possible to the socket of the first horizontal pipe.



### Floor and ceiling crossings

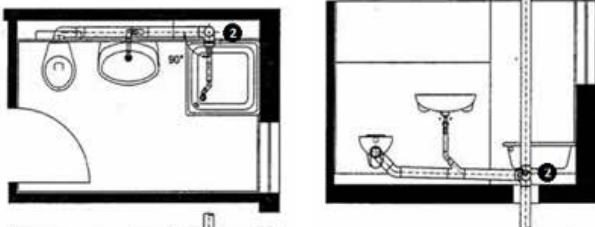
- Floor and ceiling crossings must be made both moisture resistant and soundproof using e.g. mineral wool or foam material.

### Corner Branch

- The corner branch connects two different lines coming from different directions in the waste water with one fitting.
- The fact that the lines are in different directions makes the installation difficult.

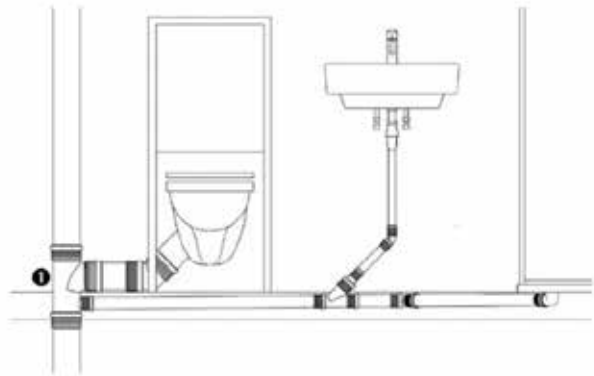
Corner branch (2) connects the shower and toilet connection to the main line with a single fitting. If the corner branch had not been used, it would have been necessary to use several fittings and difficult turns with elbows in the narrow space to make the installation.

- Thanks to the corner branch, the number of connection used decreases. This provides comfortable flow and contributes to silence.



### Shower Branch

- For an economic and easy installation of a toilet and waste pipes separately to the soil stack you can use a Shower branch ①.



### Fire collars

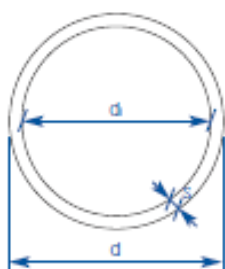
According to Turkish fire protection regulation published in

- 2007, except for the branch pipes passing through wet areas in high-rise buildings, it has been reported that all other pipes larger than 70mm must be at least low flammable (Published date 19/12/2007, Nr: 26735, scheme 5, vol 47, chapter 4, article 29/4)
- Beside this, normal flammable pipes may be used if they are installed with fire collars. (Published date 9/07/2015, issue 29411, 2015/7401, article 7)
- If normal flammable pipes are installed, in floor transitions or in horizontal and inclined lines the fire collar usage is mandatory.



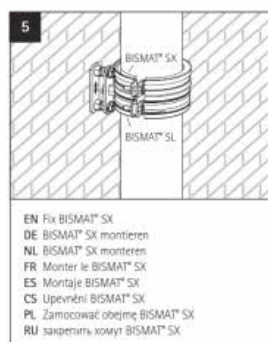
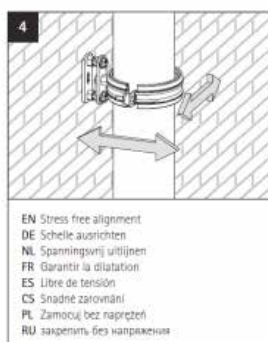
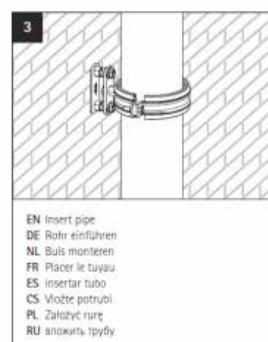
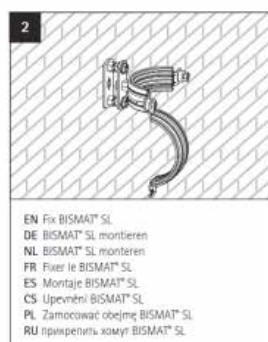
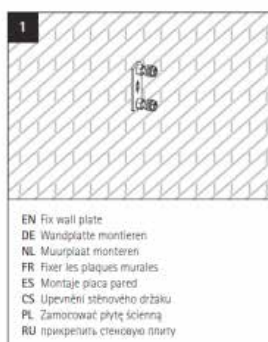
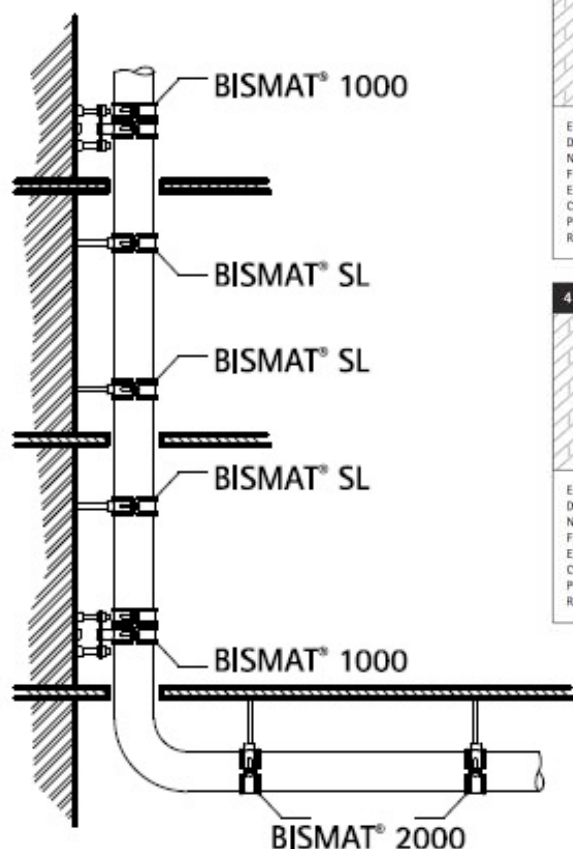
The pipe collar can be changed according to types of pipe.

Pipe Diameter	d	s	Diameter of fire collar		
			Standart Pipe	Pipe with Coupler	Inclined Pipe with Coupler
DN	mm	mm	mm	mm	mm
50	50	1,8	50	63	75
70	75	2,3	75	90	110
100	110	3,4	110	125	140
125	125	3,9	125	140	160
150	160	4,9	160	180	200
200	200	6,2	200	-	-



## Pipe clamps for low noise systems

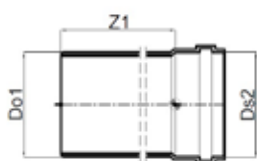
- Low noise systems are tested in Fraunhofer Institute in Frankfurt according to EN 14366 standard. In the set up, the tests are done in different parts of building.
- To get the best low noise performance, pipe clamps should be used. If different types of clamps are preferred, the noise level may be changed.
- There are two different types of low noise system clamps as fixed (1) and sliding (2).
- Scaffolding distances should be taken into consideration according to instructions in the related part of this manual.



#	Ø (mm)	Ø (DN)	Type	Faiz (N)
336 3 070	75	70	KA	650
336 3 075	80	70	GA	650
336 3 080	85	80	GA	820
336 3 100	110	100	KA / GA	820
336 3 125	125	125	KA	820
336 3 137	135	125	GA	820
336 3 150	160	150	KA / GA	820
336 3 200	210	200	GA	820

EN KA = Plastic drain pipe, GA = cast iron drain pipe  
DE KA = Kunststoff Abflussrohr, GA = Guss Abflussrohr  
NL KA = Kunststof afvoerbuis, GA = gietijzeren afvoerbuis  
FR KA = Tuyau synthétique, GA = tuyau en fonte  
ES KA = Tubería de drenaje de plástico, GA = tubería de drenaje de hierro fundido  
CS KA = Plastové odpadní potrubí, GA = litinové odpadní potrubí  
PL KA = Rura odpływowa z tworzywa sztucznego, GA = rura odpływowa żeliwna  
RU KA = Пласт. канализ. труба, GA = Чугунная канализ. труба

# Wavin SiTech+ Product range

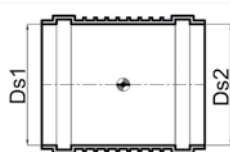


## SiTech+ Pipe

SAP Code	Dimensions mm	Do1=Ds2 mm	Z1 (Height) mm
3083253	50	50	150
3083254	50	50	250
3083255	50	50	500
3083256	50	50	1000
3083257	50	50	2000
3083258	50	50	3000
3083289	75	75	150
3083290	75	75	250
3083291	75	75	500
3083292	75	75	1000
3083293	75	75	2000
3083294	75	75	3000
3083295	110	110	150
3083296	110	110	250
3083298	110	110	500
3083299	110	110	1000
3083300	110	110	2000
3083301	110	110	3000
3083303	125	125	250
3083304	125	125	500
3083305	125	125	1000
3083306	125	125	2000
3083307	125	125	3000
3083308	160	160	250
3083309	160	160	500
3083310	160	160	1000
3083311	160	160	2000
3083312	160	160	3000
3070674	200 (*)	200	3000

\* Produced without socket

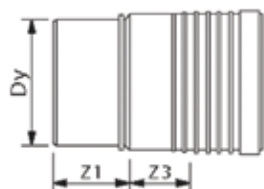
# Wavin SiTech+ Product range



## Coupler

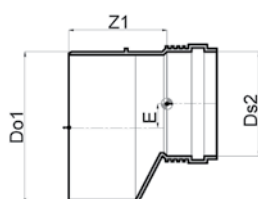
SAP Code	Dimensions mm	Ds1=Ds2 mm
3067791	50	50
3067792	75	75
3067794	110	110
3067795	125	125
3067796	160	160
3071070 (*)	200	200

\* Produced from PVC as black colour.



## Expansion Socket

SAP Code	Dimensions mm	Z1 mm	Z2 mm
3074809	50	52	56
3085676	75	59	64
3067809	110	152	79
3074812	125	171	91
3074813	160	187	99



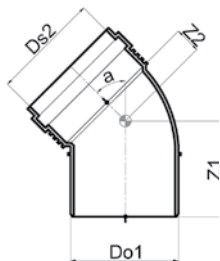
## Long Eccentric Reducer

SAP Code	Dimensions mm	Do1 mm	Ds2 mm	Z1 mm	E mm
3067815	75	75-50	50	77	12
3067816	110	110-50	50	106	27
3067817	110	110-75	75	98	17
3067818	125	125-110	110	98	7
3067819	160	160-110	110	121	24
3067820	160	160-125	125	117	16
3071069 (*)	200	200-160	160	130	16

\* Produced from PVC as black colour.



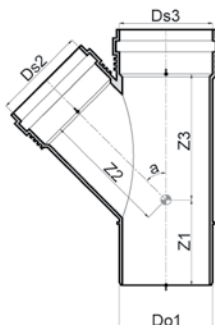
# Wavin SiTech+ Product range



## Bend

SAP Code	Dimensions mm	Do1=Do2 mm	Z1 mm	Z2 mm	a °
3067726	50 x 45°	50	65	17	45
3067741	50 x 87.5°	50	78	31	87.5
3067727	75 x 45°	75	75	22	45
3067742	75 x 87.5°	75	95	45	87.5
3067729	110 x 45°	110	96	33	45
3067744	110 x 87.5°	110	128	64	87.5
3067730	125 x 45°	125	105	38	45
3067745	125 x 87.5°	125	141	74	87.5
3067731	160 x 45°	160	121	48	45
3067746	160 x 87.5°	160	166	94	87.5
3070672 (*)	200 x 45°	200	147	75	45
3070673 (*)	200 x 87.5°	200	195	127	87.5

\* Produced from PVC as black colour.



## Branch

SAP Code	Dimensions mm	Do1=Do3 mm	Do2 mm	Z1 mm	Z2 mm	Z3 mm	a °
3067751	50-50 x 45°	50	50	64	71	71	45
3067774	50-50 x 87.5°	50	50	82	35	36	87.5
3067752	75-50 x 45°	75	50	56	82	77	45
3067775	75-50 x 87.5°	75	50	82	45	35	87.5
3067753	75-75 x 45°	75	75	74	96	96	45
3067776	75-75 x 87.5°	75	75	95	49	49	87.5
3067778	110-50 x 87.5°	110	50	96	63	37	87.5
3067779	110-75 x 87.5°	110	75	109	66	52	87.5
3067780	125-110 x 87.5	125	110	133	77	71	87.5
3067757	110 -50 x 45°	110	50	63	105	93	45
3067758	110-75 x 45°	110	75	71	122	113	45
3067760	110-110 x 45°	110	110	108	138	138	45
3067761	125-75 x 45°	125	75	70	133	121	45
3067762	125-110 x 45°	125	110	95	149	146	45
3067763	125-125 x 45°	125	125	106	156	156	45
3067781	125-125 x 87.5°	125	125	141	80	79	87.5
3067764	160-110 x 45°	160	110	82	175	164	45
3074213	160-110 x 87.5°	160	110	165	103	103	87.5
3067765	160-160 x 45°	160	160	120	200	200	45
3074214	160-160 x 87.5°	160	160	165	111	101	87.5
3070903 (*)	200-200 x 45°	200	200	140	250	253	45

\* Produced from PVC as black colour.

# Wavin SiTech+ Product range



Swept Branch

SAP Code	Dimensions mm	Do1=Ds3 mm	Ds2 mm	Z1 mm	Z2 mm	Z3 mm	a °
3067835	110-110 x 87.5°	110	110	144	143	64	87.5



Shower Branch

SAP Code	Dimensions mm	Do1=Ds3 Ds4 mm	Ds2 mm	Z mm	Z1 mm	Z2 mm	Z3 mm	Z4 mm	a °
3071187	110-110-50 x 87.5°	110	50	111	96	63	79	64	87.5



Corner Branch

SAP Code	Dimensions mm	Do1=Ds3 mm	Ds2=Ds4 mm	Z1 mm	Z2=4 mm	Z3 mm	a °	as °
3067831	110-50-50 x 87.5°	110	50	96	63	37	87.5	90



Double Branch

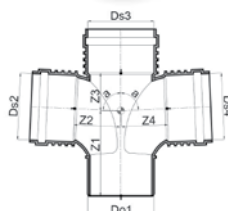
SAP Code	Dimensions mm	Do1=Ds3 mm	Ds2=Ds4 mm	Z1 mm	Z2=Z4 mm	Z3 mm	a °
3070908 (*)	50-50-50 x 45°	50	50	60	64	64	45
3070904 (*)	75-50-50 x 45°	75	50	52	87	82	45
3074217	110-50-50 x 45°	110	50	96	63	37	45
3070907 (*)	110-110-110 x 45°	110	110	78	140	140	45
3070906 (*)	125-110-110 x 45°	125	110	90	147	142	45

\* Produced from PVC as black colour.

# Wavin SiTech+ Product range



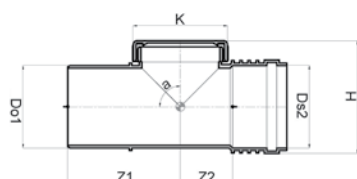
Double Swept Branch



SAP Code	Dimensions mm	Do1=Do3 mm	Ds2=Ds4 mm	Z1 mm	Z2=Z4 mm	Z3 mm	a °
3067838	110-110-110 x 87.5°	110	110	144	143	64	87.5



Access piece

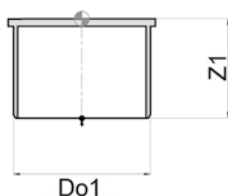


SAP Code	Dimensions mm	Do1 mm	Z1 mm	Ds2 mm	Z2 mm	H mm	K mm	a °
3067784	50	50	83	50	36	80	65	90
3067785	75	75	102	75	50	111	93	90
3067787	110	110	135	110	72	155	128	90
3067788	125	125	142	125	74	162	146	90
3074215*	160	160	200	160	121	236	141	90

\* Produced from PP as handmade



End Cap



SAP Code	Dimensions mm	Do1 mm	Z1 mm
3072439	50	50	36
3072440	75	75	35
3072441	110	110	39
3072442	125	125	49
3067830	160	160	55



S Siphon / SiTech+ S Siphon

SAP Code	Dimensions mm	Do1 mm	Z1 mm
3081684	110	45°	6
3081685	110	90°	6

**SiTech+**

# Checkmate



**20%** *More  
weight*

*Less  
noise*

New Wavin SiTech+ sets a higher standard for low-noise soil and waste systems. With 20% more weight in the fittings, we have increased robustness and reduced the noise of water flow. Even in areas that are difficult to reach, installation is now easier with our improved product design. For any waste water installation project, SiTech+ is the better choice.

## Notes

[illegible]



## Notes

[illegible]

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Heating and cooling

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Wavin is part of Orbia, a community of companies working together to tackle some of the world's most complex challenges. We are bound by a common purpose:  
To Advance Life Around the World.



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